

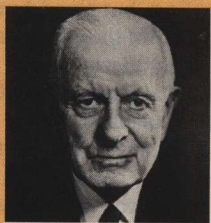


Mike James profiles Thomas J Watson Sr, the sewing machine salesman behind IBM

The name of IBM occurs time and time again whenever and however you take a look back over the important events of computing. Sometimes you can track down a single individual who was responsible for what happened, but more often than not it was a team effort and it is very difficult to say who did what or who was really responsible for the step forward. It is almost as

if the company was a single creative force pushing the development of computing. For a generation of computer users IBM was computing – anything else was a pale imitation at a lower price. This cannot have been achieved by the random efforts of its employees; Thomas J Watson Senior was the first of its guiding lights.

File card: Thomas J Watson Snr



Name: Thomas J Watson Snr

Born: 1874

Country: USA

Specialism: Selling

Theoretical: A view of life

Products: IBM

Companies: IBM

Many people think of IBM as a huge monolithic company that has always been around, probably never deserving to survive, and certainly no good thing. The same attitude extends to its founder Thomas J Watson. He is often seen as the super salesman, interested in nothing but the sale and totally uninterested in the product. If you follow this view you can be led to believe that IBM was drawn into computing by accident, that Watson even resisted the move, and was only successful by being good at selling. In this picture IBM

might as well have been a frozen food company as a designer and seller of computers. This isn't so...

Thomas Watson was born in 1874 into a family of Scottish descent who had emigrated from Ireland to avoid the potato famine. They were involved in the lumber business and the young Watson must have been influenced by the idea of commerce from an early age. When he finished school his father had ambitions of him becoming a lawyer, but he wanted to be a teacher. A single day of teaching cured him of this plan! So the next idea was to go into business. His father agreed as long as he went to business school. He completed the courses in accounting and business and immediately landed himself a \$6-a-week job keeping the books of a butcher's shop. But he didn't see keeping books as his lifetime's career. His next move was the one that probably set the course of the rest of his life. He went on the road selling sewing machines and pianos with a travelling salesman.

He studied the techniques, but at first was no good at selling. So he watched the more experienced

salesmen's techniques and learned. Eventually he got so good at it that when he quit the boss offered to sell him the business.

After a few faltering attempts to get a good job he eventually ended up with the National Cash Register company – NCR – or 'the cash' as it was known. Watson fell under the spell of a talkative Irish salesman-cum-manager called John Range. This was where Watson really learned the skills he would need in the coming years. Not just the salesman's technique, but the role of father-figure-boss of countless other salesmen. At first he was on the receiving end, but soon he would practice the role himself.

When Watson failed to sell any cash registers Range set about telling him that excuses weren't good enough. A demoralising tongue-lashing that ended in an uplifting and sympathetic examination of what the difficulties in selling were. They went out on the road together and Watson was amazed that each time Range was involved in the selling they sold a machine. Eventually Watson, at 25 years old, was the top salesman in the area.

Branching out

He next became manager of his own branch in Rochester. Near the bottom of the sales league when Watson took over, it was soon sixth from the top. Then the sales fell off. Partly due to market saturation, but also due to competition in the area. Watson knew how to deal with this problem. Like all NCR salesmen he knew how to make the competition's machines malfunction. The dirty side of the business made Watson feel ashamed, but he indulged nevertheless.

His first big managerial job was to set up a spoiling operation against the second-hand trade in cash registers. He set up a shop next door to any second-hand shop and sold machines at cut-down prices. With a million NCR dollars to use he drove the opposition out of the market. This work was probably illegal, but Watson got on with the job and did it well.

Eventually he was summoned to meet the boss. John Henry Patterson was the real super salesman behind NCR. He had taken it from nothing by improving machine design and writing a sales manual. His ideas on how a corpo-

ration should be run were revolutionary. He built a factory of glass with trees and greenery – a paternalistic idyll, not unlike the way we think of a Japanese company. But unlike the true industrial philanthropists Patterson was only interested in increasing his workforce's efficiency by improving its wellbeing. "It pays," he said. "Hungry people, people with bad diets or in poor health, are not good producers."

Watson's position within NCR grew more and more important until he reached the top executive level. Patterson was so pleased with Watson that he bought his prize employee a house and a car.

Then it all went sour. Watson and 38 other NCR executives were accused of unfair business practices. He received a one year jail sentence and a \$5,000 fine. Watson appealed and the case remained pending for some years – casting a long shadow over his future. Just short of his 40th birthday he argued with Patterson and was fired.

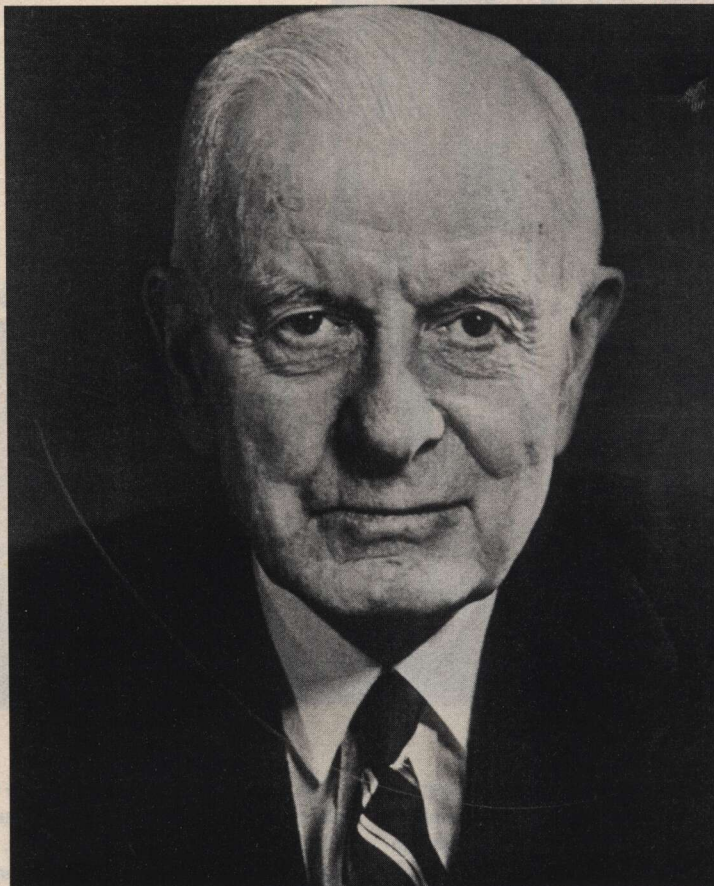
He was badly hurt by Patterson's attitude. To go from top man to being sacked in so short a time would have been a sobering experience for any man. In 1914 he became manager of the Computing-Tabulating-Recording company (CTR) – deep in debt and close to going out of business.

CTR had been formed out of Hollerith's Tabulating Machine company and others. It produced the punch card sorting and tabulating machines that were used in the 1890 census. It also produced a wide range of time clocks, scales and simple accounting machines.

One of Watson's first moves was to improve the tabulating machine by making use of his experience of cash register mechanisms gained at the NCR knockout department. They built machines to look like the opposition's models, but with flaws included so they failed and gave the real thing a bad name.

This time the method was used to improve the CTR machine by examining the competition. Hollerith was not impressed by this early example of reverse engineering! Watson constantly sought the most from his engineers and never undervalued them.

In 1915 the court of appeal set aside their verdict and Watson was promoted to president of CTR. The company's sales had grown from \$4 million in 1914 to \$8 million in 1917. In 1919 his engineers had produced the ultimate tabulating machine – electrically operated it fed the cards automatically and had a built-in



Thomas J Watson Snr, the super salesman who turned IBM into today's world-famous organisation

printer. By 1920 CTR's gross income was \$14 million. In 1924, when Watson was 50, he became chief executive officer and changed the name to International Business Machines – IBM.

Although he had a firm belief that accounting machinery was the way to conduct business, he was shocked to learn that in 1929 only 2 percent of the nation's accounting needs were being met by machinery. Something needed to be done.

Put to the test

Benjamin D Wood was an educational researcher at Columbia University and his problem was marking thousands of test results. Seeing that manual methods were not getting anywhere he begged an appointment with Watson.

Wood had a vision of how IBM's mechanical computers could change every aspect of life. Watson listened. Two days later truckloads of tabulators and counters were delivered to Columbia, followed by an army of engineers and training people to show Wood's staff how it all worked.

Watson visited the laboratory often and was pleased to see it all going smoothly. Then one day

Wood voiced his concerns, "I am convinced that these machines can operate almost infinitely faster than they are going now!" "How fast?" asked Watson. Wood answered that as they were electrical the speed of light was the limiting factor. The next day the IBM engineers were carpeted for not spotting this simple fact. Wood was put on the IBM payroll and was the first PhD on the IBM staff.

The IBM involvement with Columbia spread. An astronomer, Wallace Eckert, discovered that the machines could be used in lunar calculations and persuaded Watson to set up the Thomas J Watson Astronomical Computing Bureau. IBM supplied a sequencing mechanism and the only mechanical multiplier available at the time – an early precursor of the electro-mechanical computers. Drawn to this exciting centre of computer development was a young man called Howard Aiken.

In 1936 Aiken heard about the successful use of IBM equipment in scientific research. He knew about the modified 601 multipliers and sequencing mechanisms used and he knew that to go further he needed to start from scratch. He started to dream about building a computer. Aiken didn't like Watson's paternalistic style of doing things, but nevertheless he asked IBM for

help. Watson eventually financed the experiment with an initial gift of \$1 million which grew to \$5 million as the machine was built.

Off the Mark

The Mark I is really Aiken's story, but it had an important effect on Watson and IBM. When the machine was completed Aiken didn't acknowledge IBM's contribution and Watson was furious.

The Mark I was unveiled in 1944. Two years later IBM had produced the SSEC – Selective Sequence Electronic Calculator. The machine had 12,500 valves, 21,400 relays and was way ahead of anything else. It could store eight 20-bit numbers in electronic memory, 150 numbers on the relays and 20,000 numbers on 60 reels of punched tape. The first publicly available computer, it was used for many years to do work ranging from the design of turbine blades to oil field exploration.

The next step for IBM was to build a range of electronic computers. But they didn't. Presper Eckert and Mauchly visited IBM looking for help with the building and marketing of their machine, but Watson was so sure that IBM was ahead that he sent them away. Instead Remington Rand got the prize – the Univac. This looked like the end of IBM in the new world of electronic computing, but Rand bungled it and gave IBM the time it needed to make up for the slow start.

IBM produced the 603 electronic calculating machine in 1946. Over 5,000 were built. The first real IBM computer was the 701 in 1952, but it didn't look as good as Sperry Rand's Univac – the IBM machine needed an operator to feed punched cards, the Univac used more modern magnetic tape.

This may well have been true, but many of IBM's customers were already using punched cards and so the 701 was considered a more evolutionary approach! Twenty 701s were leased at \$24,000 per month and IBM was at last a fully fledged computer company.

In 1952 Thomas Watson Junior became president of IBM. A new era had begun. Thomas Watson Senior remained chairman of IBM until he died of a heart attack in 1956 at the age of 82. The legacy he left behind had more than enough momentum for the future, but it would be the task of his son to see it through. ■

Next month: The growth of IBM – Watson Jr and the System 360.